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## **Our Proposal For Klang River Purification**

We understand that Selangor State Government is planning to spend Billions of Ringgit for rehabilitation and development of Klang River as appeared in news reports.

### ***Selangor to ink RM50b Klang River clean-up agreement***

*July 01, 2010 The Edge*

*SINGAPORE, July 1 — The Selangor state government is expected to sign the Points of Agreement (POA) with companies it has appointed to rehabilitate and develop the Klang river within the next two months.*

*This latest development was revealed by Selangor Menteri Besar Tan Sri Abdul Khalid Ibrahim during a special briefing at the ongoing Singapore International Water Week here, according to the event organiser today.*

*The Selangor government had earlier appointed three companies to carry out the Klang River rehabilitation project that is expected to attract RM50 billion (US\$15.4 billion) worth of investments.*

*The companies are TSS-Mako Engineering Sdn Bhd, GJA Engineering and Construction, and Wessex Water I-Bhd Consortium.*

*Khalid met up with the companies here to fine tune details of the project's progress.*

*He also met with industry partners who could be leveraged to bring success to the Klang River Rehabilitation and Development programme.*

*It is estimated that the entire clean-up and rehabilitation of the 120 km long river would take 15 years to complete.*

*Cleaning up the river will take place within the first two to three years, involving RM1 billion for treatment and another RM1 billion for development. — Bernama*

We also understand that they want to learn from Singapore on how the rivers were cleaned there.

We believe many contractors became very happy with this news for the scale of the projects they may get involved.

While we are also happy to hear such good news on long-awaited and much-needed serious actions for environmental protection we still have to express our concern on the method they "clean" the river.

In Singapore we can see more fish swimming in their rivers compared with the ones in Malaysia. The reason why the rivers in Singapore appear more clean than the rivers in Malaysia is simply because of the better drainage and sewage system. We only have to make sure that raw water from households/industries will be discharged to centralized sewage treatment systems with good treatment capacity.

Having said so, we would like to point out that even the rivers in Singapore carry foul odor. They employ heavy equipments to dredge the sludge from the rivers. Therefore, from our point of view, the conditions of the rivers in Singapore are not up to our satisfaction. They should be able to perform better than now.



Dredging work is not the fundamental and sustainable solution for sludge removal. Foul odor can not be eliminated as well and spreads to everywhere during the work. A few years later sludge must be removed again. Therefore this is not a sustainable operation but an endless game.

Klang River has

- approximately 120 km length
- a basin of about 1,288 km<sup>2</sup>
- 11 major tributaries
- 700 km of total tributaries length

Then, how we can "clean" this huge size of river entirely ?

We believe that if we really want to clean a river we should do so entirely including all the tributaries. Normal cleaning exercise is to dredge the sludge with heavy equipments and collect rubbish from the river only at some selected areas, however this method is unable to maintain a good condition for a long time. Foul odor can not be removed at all. A few years later we have

to repeat the same exercise and thus, it will be an endless game.

**These pond/lake/river were cleaned by EM.  
Conventional system can not achieve  
such good result.**



EM活性液の投入を始める前の神龍湖  
(平成14年4月)

投入を始めて1年以上経過し、きれいになった神龍湖  
(平成15年7月)



Then how we can achieve a fundamental and sustainable solution to a pollution of Klang River ? ***Our answer is to treat all sorts of pollution sources with EM Technology.***



Practically, if 10 % of influent is treated by EM river water will be maintained good, however, we know that finding all sorts of pollution sources alongside of Klang River and talking to all of them will be a hard exercise. Persuading all of them to use EM would be even harder simply because many of them believe that they are not responsible for the pollution.

Rivers usually have following major sources of pollution :

- ✓ Sewage treatment plants
- ✓ Animal farms
- ✓ Agriculture industries including plantations
- ✓ Manufacturing factories
- ✓ Workshops
- ✓ Landfills
- ✓ Golf courses
- ✓ Households
- ✓ Etc

It is assumed that Klang River has 3 major sources of pollution : Sewage treatment plants, households and soil erosion.

Public and private sectors including households are jointly and severally responsible for the pollution. While we should be prepared to talk to all of them we would like to recommend here to treat all the IWK plants (government managed STP) first simply because they are a Government body and Federal/State Government should be able to talk to them rather easily. We assume that there are at least 100 IWK plants alongside Klang River including tributaries.



One of the IWK plants

It is also understood that not all the IWK plants can comply with the guideline for discharging the water after treatment. And we also know that even the quality of its water can meet the guideline river will eventually be polluted with foul odor and sludge accumulation.

If EM is applied to the IWK plants it will multiply in the plants and kill the foul odor and clean the water before discharge. The effluent carries EM into the river and EM will keep cleaning the water in the river.

If IWK agrees to follow our advice and apply EM at their plants everyday at a ratio we recommend the water quality of Klang River will jump from Class III to Class I just within a few years' time provided that the Government can control the soil erosion. If we can persuade other privately operated sewage treatment plants and households speed of improvement of water quality would be much faster.

Since all the sources of pollution are obliged to clear the guideline of DOE (Department Of Environment) the cost of treatment will be borne by them and therefore the Government does not need to spend any cost at all. With this, source of pollution will become the source of purification and IWK, as an Government agency, should take an initiative to commence their river cleaning exercise at their own cost by way of improving the quality of their own water.

It does not make any sense for us to apply EM direct to the river. We should keep applying EM to the major sources of pollution.

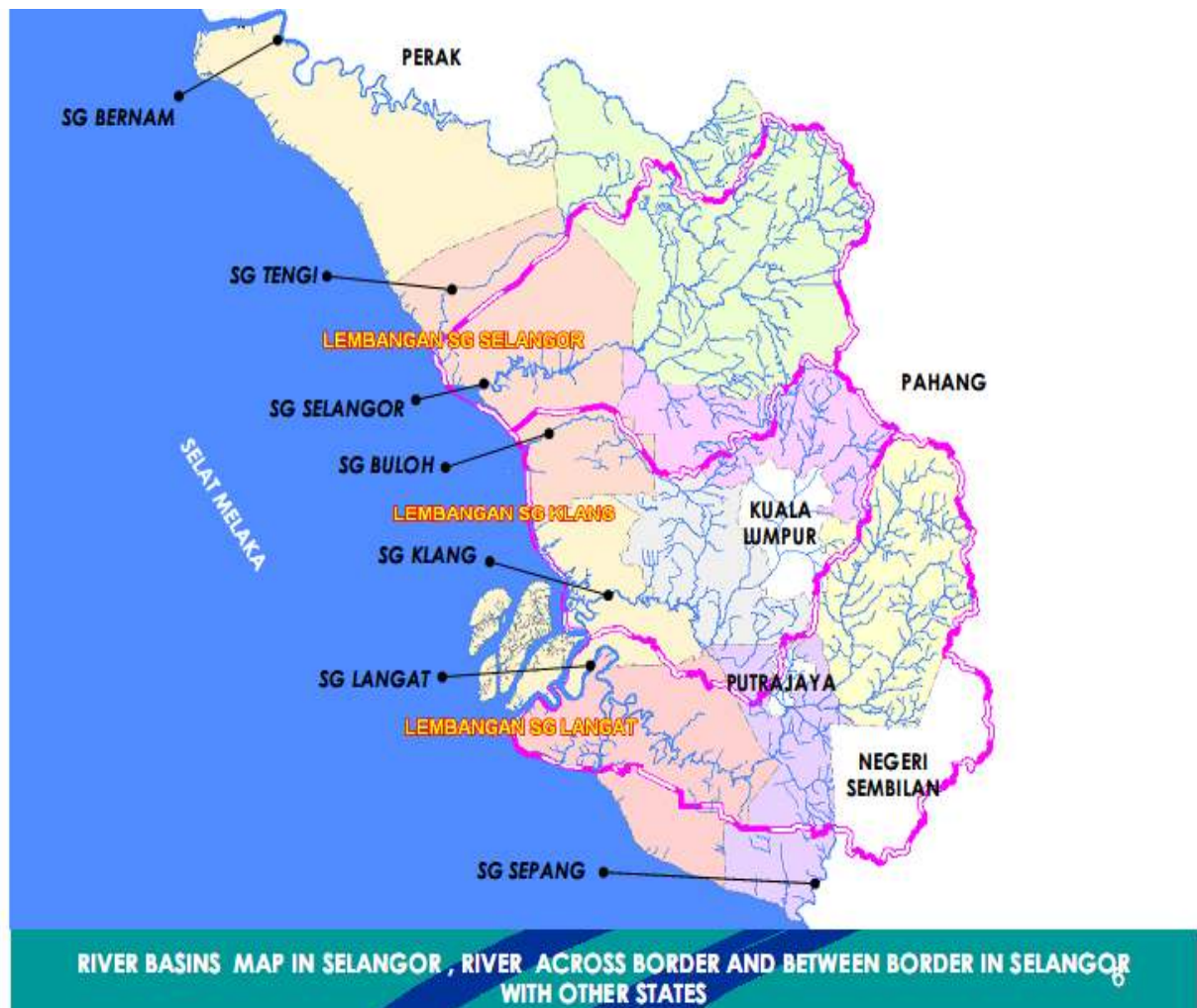
And people must realize that all of them are equally responsible for the pollution. Ordinary citizens never imagine that they are polluting rivers heavily by discharging organic waste such as rice rinse water from their houses through kitchens. In Japan 240,000 ~ 320,000 tons of rice bran is discharged to water channels every year as rice rinse water. In fact, it is reportedly accused that Tokyo Bay has 3 major sources of pollution : 70 % by households, 20 % by Industries and 10 % by others ! As such it is very important for the households to contribute to the cleaning exercise.

Now, if we talk about river cleaning we always wonder why people talk only about cleaning Klang River, not Selangor River.



Why we insist the importance of Selangor River is because this river is one of the major water resources for the people in Selangor, Kuala Lumpur and Putra Jaya. If we have some major problems with this river we can not get enough water supply.

Selangor River has a length of 110 km with the area of river basin of 1,980 km<sup>2</sup> and water catchment of 197 km<sup>2</sup>. This is as large as Klang River, but problem with this river is that, unlike Klang River, Selangor River has many more kinds of pollution sources such as sewage treatment plants, animal farms, workshops, factories and mining with which the river has been polluted already. We understand that the quality of the water at the points of intake should be *Class II or better* but at some certain places it is difficult for them to maintain this standard.



We are not sure how many IWK plants have been built alongside Selangor River but as mentioned earlier Government is recommended to apply EM to all the IWK plants while they approach all the other major sources of pollution. If all the IWK plants agree to apply EM to their plants on daily basis quality of the water of this river will be improved from Class III to Class I in a few years' time as was discussed already with the case of Klang River. If more pollution sources join IWK the speed of improvement will be much faster.

Many school children are engaged in river cleaning in Japan. In the case of large rivers we should apply EM and EM mud balls only to the areas with heavy accumulation of sludge.



Selangor River has so many different types of pollution sources and therefore EM application method will be different accordingly. If we are appointed as a "doctor" for sick rivers we will come out with our tailor-made application method for each of them. We are confident to say that once the river is getting better and better many people will feel happy to participate to environmental protection exercise with EM and EM mud balls so that the river will not be polluted anymore.

In Japan more than 100 rivers, ponds, lakes and ocean have been cleaned by volunteers and communities and we are very sure that same thing will happen in Malaysia as well.

Please call us. We are ready to work together with you.

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